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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,318	05/10/2001	Takeshi Hoshida	064731.0184	5944

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EXAMINER
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NGUYEN, CHAU M

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/853,318

Applicant(s)

HOSHIDA, TAKESHI

Examiner

Chau M Nguyen

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 and 17-20 is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This Office action is in response to the Amendment filed on May 28, 2004.
2. Claims 1, 2, 10, 17 and 20 have been amended.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhee at al. (Hereinafter "Rhee") (U.S. Pat. No. 6,606,178 B1) in view of Nishizawa Hideki (Hereinafter "Nishizawa") (JP. Pat. No. 2000-059300A), (the electronic-version translation is also attached for understanding purpose).

As claim 9, Rhee discloses an optical receiver (20, see fig. 2) for a wavelength division multiplex (WDM) optical communication system, comprising:

a demultiplexer (60), operable to demultiplex a wavelength division multiplex (WDM) signal into a plurality of phase-modulated (non-intensity) optical information signals (col. 3, line 65- col. 4, line 10); and

a detector operable to recover a data signal from optical information signal.

Rhee does not show optical receiver comprising:

an asymmetric interferometer operable to receive a corresponding one of the plurality of non-intensity modulated optical information signals;

the asymmetric interferometer operable to convert the non-intensity modulated optical information signal into an intensity modulated optical information signal.

However, in view of Nishizawa, the drawing 1 shows an asymmetric interferometer (13) for receiving a phase-modulated (through phase modulator 11) (non-intensity) optical information signal and converting into intensity modulated optical information signal (Nishizawa, Abstract, Solution Section, line 5 and Means Section, paragraphs [0015]-[0017]). Since Rhee discloses the use of an interferometer for intensity modulating the optical signal at the transmitting side (Rhee, element 42 in fig. 3). Therefore, it would have been obvious to one having ordinary skill in the art to use an asymmetric interferometer (at the receiving side) as taught by Nishizawa into the optical system of Rhee for converting each non-intensity modulated optical signal into an intensity modulated optical signal.

an asymmetric interferometer is used for increasing the intensity of the signal and adjusting delay bit length of Mach-Zender interferometer, such that, improving the speed of the communication system (Nishizawa, Effect of The Invention Section).

As claims 12 and 14, the combination system of Rhee and Nishizawa as applied in the claim 9, Nishizawa discloses an asymmetric Mach-Zender interferometer and the use of a dual detector (Nishizawa, fig. 1 and Abstract).

As claim 13, Nishizawa discloses the asymmetric interferometer comprising two interferometer paths having a path difference operable to create a one symbol period or one bit shift in the optical information signal. (Nishizawa, Abstract).

As claims 15 and 16, Rhee mentions the non-intensity modulated optical information signal comprises a frequency-modulated information signal (Rhee, col. 2, lines 24-27 and col. 5, lines 66-67).

***Claim Objection***

4. Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Allowable Subject Matter***

5. Claims 1-8 and 17-20 are allowed.

***Response to Arguments***

6. Applicant's arguments filed on 28 May, 2004 have been fully considered, but they are not persuasive (for the claim 9 and its dependent claims).

7. For the 103 rejection of claim 9 based on Rhee and Nishizawa, Applicant mainly argued:

"...since the optical information signals disclosed in Rhee are already intensity modulated, there is no reason to include an asymmetric interferometer as claimed. Thus, the suggestion or motivation required by M.P.E.P. § 2143.01 for the proposed combination of Rhee and Nishizawa does not exist, and ... failed to identify the source of such suggestion or motivation". (Amendment, page 13, lines 3-8)

The Office disagrees with the above Applicant's argument(s). Rhee discloses the arrangement of phase modulators ( $50_1$ - $50_n$ , see fig. 8) and intensity modulators ( $42_1$ - $42_n$ ) (col. 5, lines 63-65), wherein, phase modulators and intensity modulators could be alternatively positioned (col. 7, lines 1-10). From such teaching, one with ordinary skill in the art would be able to construct a phase modulator followed by an intensity modulator in order to convert phase-modulated signal into intensity-modulated signal. Further, in the light receiver of Nishizawa, an asymmetric interferometer (13, fig. 1) is used to receive and convert a phase-modulated signal (from 11) into intensity-modulated light (Nishizawa, Abstract, Solution), and since both inventions are related to the phase-modulated light transmission and converting into intensity-modulated light, therefore, it would have been obvious to one having ordinary skill in the art to use an asymmetric interferometer as taught by Nishizawa and arrange alternatively into the optical system of Rhee in order to improve the speed the speed of the communication system (Nishizawa, Effect of The Invention Section).

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set for the in 37 CFR 1.135(a).

A shortened statutory period for reply to this final action is set to expired THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened


statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau M. Nguyen whose telephone number is 703-305-8965. The examiner can normally be reached on Mon-Fri from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4726. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

C.M.N.

Aug. 04, 2004

  
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